Draft Proposal for Fisheries Impacts Analysis of Sacramento River Diversion Alternatives

The Integrated Storage Investigations Program is a coordinated series of investigations designed to evaluate storage as a tool to meet CALFED objectives.

The Offstream Storage Investigation, one element of the ISI Program, is to evaluate four offstream reservoirs north of the Delta. Thus far, the investigation has been examining alternative diversion scenarios and the potential impacts to the Sacramento River ecosystem and fisheries. Studies under consideration include:

- An evaluation of diversion locations and timing compared to the timing and distribution of anadromous fishes in the Sacramento River is completed.

- Two contracts are being processed with UC Davis researchers to develop and verify models that can quantify river fluvial-geomorphology and riparian zone changes based on historical data and to evaluate hydrologic variables on future conditions. There will be two models developed and integrated to evaluate and predict potential changes in river meanders and erosion/deposition features and vegetation distribution with proposed alternative diversion rates and locations. They will assess potential ecological changes in the Sacramento River resulting from diversion alternatives.

Fisheries Impact Analysis Proposal

Understanding how changes in hydraulics and hydrology may influence fisheries populations is integral to evaluating impacts of diversion alternatives to the Sacramento River ecosystem. To fully evaluate diversion alternatives, we need to develop acceptable tools that will increase scientific comprehension of the relationships between changing hydraulics and responses in fish population dynamics. The program objective is to develop necessary tools to assist the ISI program in evaluating fishery impacts of upper Sacramento River diversion alternatives.

Developing a river hydraulics-fish population relationship tool model is proposed as a two-phase approach conducted over a 2-year period.

PHASE I

ISI will develop a Request for Qualifications, conduct interviews and award a contract to the selected organization or individual (University or private consultant). The contractor will be responsible for coordinating and conducting interagency and stakeholder scientific review team meetings and workshops. The function of the workshop/panels will be to develop the approach or framework to create an acceptable fisheries-hydraulics relationship. Conceptual models may be discussed and developed in conjunction with developing the approach to create a working mathematical relationship model. Tools evaluated for fishery impact analyses may consider implications of concurrent developments in fluvial-geomorphology and riparian vegetation model results and other population dynamics or hydraulic models available. The coordinator will report on group agreements on a framework for fishery impact analyses, and identify data required to complete the work.

PHASE II

Award a contract to develop working fisheries-hydraulics tools based on the results of the scientific review team recommendations. The contractor will continue to conduct review workshops to provide progress updates on tools development and receive feedback on specifics and application. The final product will be functional tools acceptable to agencies and stakeholders. The tools will be used in evaluating fisheries population impacts of changes in hydrology and hydraulics in the upper Sacramento River.